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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,839

11/12/2003

Taner Dosluoglu

DSR14446

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07/07/2006

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EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,839

Applicant(s)

DOSLUOGLU, TANER

Examiner

Howard Weiss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Attorney's Docket Number: DSR14446

Filing Date: 11/12/03

Continuing Data: Claims benefit of 60/450,089 (2/26/03); RCE established 12/16/05

Claimed Foreign Priority Date: none

Applicant(s): Dosluoglu

Examiner: Howard Weiss

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 to 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims, as amended, describe the overlap region to be "depleted of charge carriers." However, the description section of the Specification describes the depletion state of the overlap region is dependent upon the potential of the P well (Page 6 Lines 8 to 10). This implies that the normal state of the overlap region (i.e. when no potential is applied to the P well) is neither depleted nor not depleted. Thus the overlap region cannot be in a depleted state as claimed and is considered new matter.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 to 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwanami et al. (U.S. Patent No. 4,906,856).

Iwanami et al. show all aspects of the instant invention (e.g. Figure 2a) including:

- a p type silicon substrate **1**
- an N well **3** formed in said substrate and a P well **5** formed in said N well
- a deep N well **2** formed beneath said P well
- an overlap region formed between said N well and said deep N well providing electrical communication between these two wells
- a first **8** and second **8'** N regions formed in said P well and a P region **4** formed in said N well
- all part of an active pixel array (e.g. Figure 3)

In reference to the claim language referring to how the overlap regions reacts to potential changes (re. depleted charge carriers during a charge integration period), intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

In reference to the claim language pertaining to how the overlap region reacts to either the depletion or non-depletion of charge carriers, the claiming of a new use, new function, or unknown property, which is inherently present in the prior art, does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112. Since Iwanami et al. show all the features of the claimed invention, how the overlap region reacts to either the depletion or non-depletion of charge carriers is an inherent property of Iwanami et al.'s invention.

5. Claims 18 to 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (U.S. Patent No. 6,023,293).

Watanabe et al. show all aspects of the instant invention (e.g. Figures 2 and 11) including:

- a n type silicon substrate **100**
- an P well **120** form in said substrate and a N well **140** formed in said P well
- a deep P well **110** formed beneath said N well
- an overlap region formed between said P well and said deep P well providing electrical communication between these two wells
- a first **142** and second **143** P regions formed in said N well and a N region **26** formed in said N well
- all part of an active pixel array (e.g. Figure 19)

In reference to the claim language referring to how the overlap regions reacts to potential changes (re. depleted charge carries during a charge integration period), intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto* , 136 USPQ 458, 459 (CCPA 1963).

In reference to the claim language pertaining to how the overlap region reacts to either the depletion or non-depletion of charge carriers, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112. Since Watanabe et al. show all the features of the claimed invention, how the overlap region reacts to either the depletion or non-depletion of charge carriers is an inherent property of Watanabe et al.'s invention.

Response to Arguments

6. Applicant's arguments filed 12/16/05 have been fully considered but they are not persuasive. The Examiner's response in the Office Action mailed 9/14/2005 and 1/24/2006 is still pertinent and considered repeated herein. Additionally, the Specification describes the overlap regions' depletion to be dependent upon the potential applied to the P well (e.g. Page 6 Lines 13 to 22 and Page 7 Lines 5 to 10). There is no description of the overlap region to be in a depleted state otherwise. The amendment states that the overlap region is in a depleted state without a potential applied to the P well.

Also, Applicant continues to argue functional use vs. structural differences. How the inventors of the prior art use their device is not relevant. It is if the prior art devices could perform the functional use as described the claims. Applicant argues that one of ordinary skill in the art would design the overlap region of the prior art devices for different purposes than that claimed. As pointed out in a previous office action, the description does not describe how the instant invention's overlap region is designed to distinguish it from the prior art except changes in the region's depletion state when a potential is applied. However, it is well known in the art that the depletion of regions in semiconductors can be achieved by applying the correct potential. It is this principle, in addition to other factors, that many semiconductor devices are designed around. Indeed, the overlap region as claimed and described in the Specification seems to be indistinguishable from the N well and deep N well of the claims until a potential is applied.

Because of these reasons and those stated in the present office action, the stated claims remain rejected.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Igaue et al. (U.S. Patent No. 6,472,716) teach the use of overlap (i.e. connection) regions.
8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).
10. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit

Art Unit: 2814


2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on **(571) 272-1705**.

12. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/291, 293, 371	Thru 6/27/06
Other Documentation: none	
Electronic Database(s): EAST	Thru 6/27/06

HW/hw
27 June 2006


Howard Weiss
Primary Examiner
Art Unit 2814